



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,829	12/23/1999	MASATSUGU HATANAKA	49481(551)	8004

21874 7590 04/01/2004

EDWARDS & ANGELL, LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER

TURNER, SAMUEL A

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/471,829	Applicant(s) HATANAKA ET AL.	
	Examiner Samuel A. Turner	Art Unit 2877	<i>an</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10.2.03-12.24.03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is confusing in that it is still dependent from cancelled claim 2. Claims 8 and 9 which depend from claim 7 inherent this problem. For purposes of this action claim 7 will be considered to depend from claim 1.

Claim Objections

Applicant is advised that should claims 7-9 be found allowable, claims 10, 11, and 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

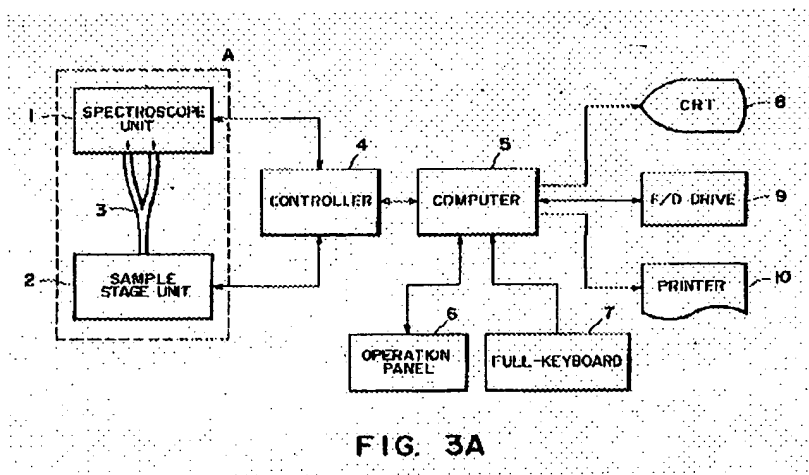
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ban et al(4,787,749).

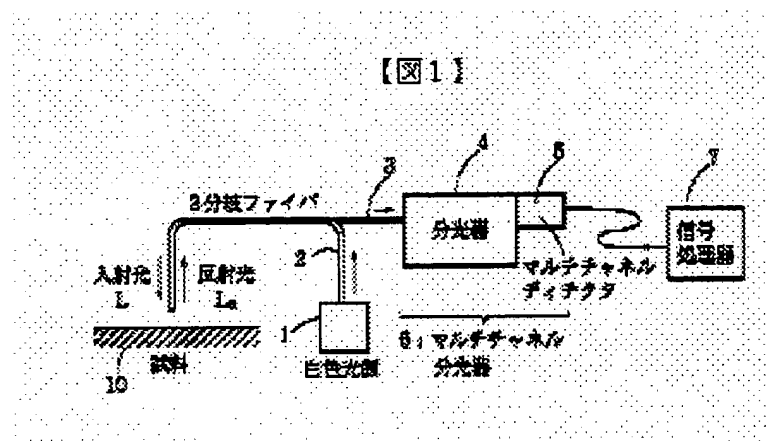
Ban et al teach a film thickness system comprising a light source(1a), at least one input and one output optical fiber(3) normal to the thin film, detector(1c), and computer(5). See figure 3A.



Claims 1, 7, 10, 19, and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shigeki et al(JP 07-294220).

Art Unit: 2877

Shigeki et al teach a light source(1), optical fiber(2) which is normal to the thin film, output fiber(3), spectroscope(4), detector(5), and processor(7). See figure 1.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeki et al(JP 07-294220).

Shigeki does not teach the use of a robotic hand or relative location of the light receiving unit in regard to the outlet of the gate valve.

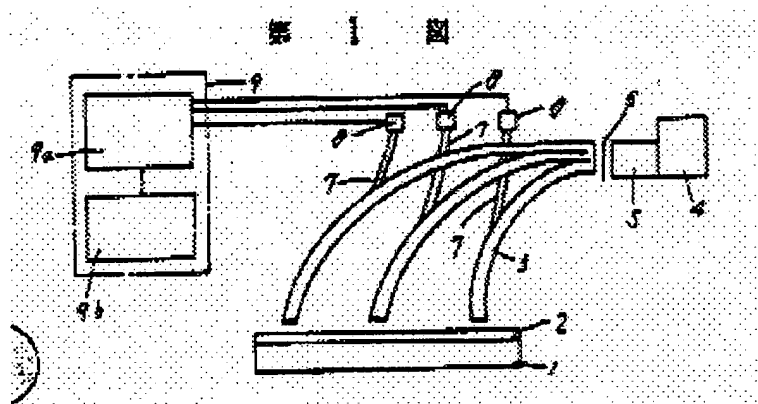
It would have been obvious to one of ordinary skill in the art at the time the invention was made locate the light receiving unit in any operable position since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. As to the robot hand of claim 17, substrates are made in a clean room and not touched by human hands. The wafer is moved between deposition, exposure, and measurement by a conveyer such as a mechanical or robot arm.

Claims 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeki et al(JP 07-294220) as applied to claims 1, 7, 10, and 17-20 above, and further in view of Aritoshi(JP 61-165608).

Shigeki fails to teach a plurality of fiber input/outputs.

Aritoshi teaches a thin film thickness system comprising a light source(4), spectroscope(5), a chopper(6), a plurality of input(3) and output fibers(7), a plurality of photodetectors(8), a data buffer(9a) which acts as a controller to transfer each wavelength successively, and a computing device(9b). See figure 1.

Art Unit: 2877



It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Shigeki apparatus by using a plurality of fibers in order to measure film thickness at all desired points on the substrate. The means for selecting which output point to process would have been a mere matter of choice between functional equivalents such as the data buffer of Aritoshi, electrically gating each detector, or shuttering the input or output light, the chopper(6) of Aritoshi.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeki et al(JP 07-294220) and Aritoshi(JP 61-165608) as applied to claims 1, 3, 4, 7, 10, and 17-20 above, and further in view of Ban et al(4,787,749).

Shigeki fails to teach the specific equations claimed.

Ban teaches solving for the thickness of a thin film by taking into account the absorption factor of the thin film. See the equations 5-10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made derive the claimed equations from the basic properties of the light and the film properties as found in the Ban equations.

Art Unit: 2877

Claims 8, 9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeki et al(JP 07-294220) as applied to claims 1, 7, 10, and 17-20 above, and further in view of Ban et al(4,787,749).

Shigeki does not teach the use of a robotic hand or relative location of the light receiving unit in regard to the outlet of the gate valve, or the specific equations claimed.

With regard to claims 8, 9, 11, and 14; it would have been obvious to one of ordinary skill in the art at the time the invention was made derive the claimed equations from the basic properties of the light and the film properties as found in the Ban equations.

With regard to claims 13, and 16 would have been obvious to one of ordinary skill in the art at the time the invention was made locate the light receiving unit in any operable position since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

As to the robot hand of claims 12 and 15, substrates are made in a clean room and not touched by human hands. The wafer is moved between deposition, exposure, and measurement by a conveyer such as a mechanical or robot arm.

Response to Arguments

Applicant's arguments with respect to claims 1, and 3-20 have been considered but are moot in view of the new ground(s) of rejection. This rejection is due to art cited by the applicant after first action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2877

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose phone number is **571-272-2432**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached on **571-272-2415**.

The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is **571-272-1562**.

Any other inquiry of a technical nature, and all inquiries of a general nature or any patent term adjustment should be directed to TC2800 Customer Service Office whose telephone number is **571-272-1585**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **<http://pair-direct.uspto.gov>**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).



Samuel A. Turner
Primary Examiner
Art Unit 2877